# A SHORT TREATISE ON FOREST-TREES, AQUATICKS, EVER-GREENS, FENCES and GRASS-SEEDS,

BY THE

RIGHT HONOURABLE

THE LATE

EARL OF HADDINGTON.

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# DIRECTIONS

## FOR

## Raiſing of FOREST-TREES.

### CHAP. I.

### INTRODUCTION.

HAVING been a diligent planter for upwards of thirty years, and having had more trees of my own planting, than, I believe, any man ever planted in his lifetime, I have vanity enough to think my experience may be of uſe to my friends: and therefore I ſhall, in as plain and diſtinct a method as I can, tell the methods I have uſed; which, tho' they differ from almoſt all the treatiſes extant upon this ſubject, yet I dare anſwer there ſhall be nothing advanced in theſe papers, but what I can get atteſted to be matter of fact, and can ſhew the demonſtration of upon my own grounds.

I have had great aſſiſtance from Mr. Evelyn, who wrote long ago upon this ſubject, and appears to be well ſkilled in it; yet he has been too credulous, and builds too much upon niceties, that are altogether trifling and unneceſſary, which makes me differ from him in many particulars.

Moſes Cook, gardener to my Lord Eſſex, hath publiſhed a very uſeful book upon the ſame ſubject, which has likewiſe its own blemiſhes. All that have written in Engliſh ſince their time, have copied from them, even

to the ſetting down of their errors; and not only ſo but have added many more of their own. Some have written like philoſophers, entertaining the fancy with airy, abſtracted ſpeculations, inſtead of conveying practical inſtructions to the inquiſitive reader; whilſt others, like quacks, promiſe a great deal, but perform nothing.

I ſhall not take up time in treating of the different ſoils proper for planting; but ſhall only tell in ſhort, that I never met with any ſoil, that ſome one or other would not grow on. And as I go along in treating of every different tree that I have experience of, I ſhall tell the ſort, and the way and management of each kind, from its being in the ſeed till it is fit for the axe; beginning with

## The OAK.

Which is raiſed from the ſeed called the Acorn: Authors write of different kinds, but I know only of one, which I had all from England. It is certain that the oak we have from abroad, for wainſcotting, and for barrels, is of a different kind; but I never could procure any acorns from theſe countries.

*Raiſed,* I have raiſed many trees, by ſetting the acorns in the ground where they were not to be removed; and I do think it the beſt way, if the vermin could be kept from deſtroying them. I have ſet ſome, with good ſucceſs, in very bare poor ground, when the ſame was fenced, and no cattle ſuffered to go there, the graſs has grown ſo rank, and it fell down and matted ſo cloſe together, that the young ſhoot could not force its way through; and the field mice, harbouring there, have deſtroyed me many buſhels of acorns; ſo that the way I have taken of late

is, to make a ſeed-bed of trenched ground, on which the acorns are put, with the ſmalleſt end to the earth, and then covered half an inch deep. The beſt ſeaſon for this work is, when the acorns drop in October, though I never could get mine ſo early; but I always put them in the ground as ſoon as I could procure them, if it was not in froſt. After they peep above ground, they may get ſome earth ſifted upon them; eſpecially if ſet in October, for the froſt may ſwell the ground and ſpue them out, and in that caſe they muſt be re-placed with the finger. After they have been in this bed for two full years, I adviſe the lifting of them, tho' ſome are for their ſtanding another year, by a notion that an acorn in two years cannot have ſpent all its full ſubſtance into the plant; but I have been careful to obſerve that, and I could never perceive any part of it unconſumed. I therefore propoſe, that, after ſtanding two years in the ſeed-bed, they ſhould be planted where they are deſigned to ſtand: I thought this had been a notion of my own; but I ſaw, ſince I have uſed this method, a wood planted by a gentleman this way, that was in a very thriving ſtate. What put me on making this experiment was, that the trenching ground for nurſeries was expenſive, and the keeping it clean was a great trouble; and I had, for many years, ſet out my firs from the ſeed-bed to where they were to ſtand, with good ſucceſs, as I ſhall explain when I come to treat of that tree. Another reaſon was my being convinced, that every removal of a tree checks its growth, and if I could raiſe them all without tranſplantation, it would be a great advantage.

*tranſplanted from Seed-bed*

All who have wrote on oaks, adviſe the cutting off the carrot-root or pap, which I think quite needleſs, and therefore never practiſe. The writers on planting

take up much time in giving directions
*Soil.* to the ſoil proper for oak; but, as i
a tree that I like much, I have planted
every where; and find it thrive in rich, poor, middli
heathy, gravelly, ſpouty, clay and moſſy ground; n
upon the dead ſand, and in ſhort on every ſoil tha
have: And it is viſible that my oaks grow faſter th
any tree I can plant, the aquaticks only excepted.

Having ſaid ſo much, I ſhall now mention the d
ſtance I would have oaks planted at. In all natu
woods the trees ſtand cloſe to one another; but
time the leaſt thriving decay, or, by often cutting
ver, and the dropping of the trees that are left
timber, periſh: by this means large oaks ſtand at
great diſtance; but I can by no means allow th
they always did ſo, or that we ſhould,
*Diſtance of Young Oaks.* a new plantation, ſet oaks at forty, fif
or ſixty feet diſtance; far leſs, as ſo
modern authors aſſert, at as many yar
For tho' we ſee great trees now ſtanding, it is m
than probable that they were all formerly in a thick
as Mr. Cook hath made very plain in his chapter
oaks; and experience may further teach us, that
we ſhould plant at that diſtance in a country ſubject
winds, we ſhould have buſhes, but never trees.
that it is requiſite that we plant very thick, as ſh
be ſhown afterwards.

*Pruning.* We now come to pruning. No t
ſhould be allowed to fork, I mean to
out two ſtems: one upright ſhoot ſhould only be
couraged; for when there are two or more, the
that ſhould run all into one, is diſperſed into many,
by this neglect, many millions of trees never come
the fourth of the value that they had arrived at, if
pains had been taken to have them trained up to
ſtem; ſo I recommend in the beginning to prune this

all other foreſt-trees when then are young; at the ſame time I am not for leaving the tree quite without branches; for ſome are neceſſary for drawing up the ſap; but I would only leave a few. If the tree hath been for ſome time neglected, begin at the undermoſt branches, and take them and the next row entirely away; but when you come higher up, prune off only a branch here and there; or ſhorten ſome of them, which muſt be cut away cloſe by the body of the tree the next ſeaſon: and take care to thin the head that the wind may get through; for, if the tree is top-heavy, the wind will take ſuch impreſſion on it, that it will either break ſhort, or be laid over, and perhaps never will be a ſtraight tree; by this way of doing, a tree may be brought to what height one pleaſes, without any more branches than what are neceſſary for drawing up the ſap, and to keep the tree upright. The cleareſt directions for this work are to be ſeen in Moſes Cook's 10th chapter, beginning at the middle of page 57th, where, I think, he names the moſt proper ſeaſons for the firſt and ſecond prunings of the oaks, and all other trees that are not ever-greens; and to him I refer my readers. Some lop, by that I mean, cut off, the top of the oaks; but I entirely diſapprove of that practice; for, the greater the height of an oak, the greater the value.

There is another way of managing this, and all other trees, that I think may, if begun in time, be better than pruning; and that is, by rubbing off in the ſpring-time the buds from the ſides of the tree, ſince, by checking the ſap's breaking out on the ſide, it forces it to riſe up to the top of the tree. *Budding.*

It were loſs of time to tell the uſes of this tree, ſince every body knows the value of it. Having thus far

far treated of the oak, that hath ſo long maintained its title of the *King of the Foreſt*, I ſhall next ſay ſomething of

## The BEECH.

They who write of trees, mention two kinds of this; but I know no difference. They *How raiſed.* are to be raiſed from the maſt, which, if it could be preſerved from the vermin ſhould be ſet in the ground without ever moving it; but that is ſo uncertain, by reaſon of the mice, that I am forced to ſow them in ſeed-beds, and to treat them every way as the oak; ſo that I ſhall repeat nothing. But there is one great difference? for, as I ſaid, the oak will proſper in any ſoil, yet *Soil.* the beech is very ſhy. In good land they thrive very well, but I think not in clay; and I am certain, not at all in wet ground; but, for dry and gravelly, none better. It is a beautiful tree, and, tho' when young they grow ſometimes crooked, yet, as they grow older, they turn ſtraight. This tree ought to be pruned and disbudded as the oak.

It makes a fine hedge for beauty in a wilderneſs; but I doubt it is not good for coppice, ſince I am told, it does not riſe kindly from the root when cut down; but of this I have no experience. It is a tree very proper for avenues, walks and groves; but, I think, were the timber of it leſs uſed for bed-ſteads, chairs, *&c.* it would be better; for the worm takes it very ſoon. In other countries it gives a great price for fuel; but, as we have ſo many coal-mines and moſſes, I hope we ſhall never be reduced to the extremity of cutting down our woods for firing. I now proceed to

## The ELM.

There are many different kinds of this tree, but I ſhall begin with that which hath grown long in this country, and is called the *Scots Elm*; of which there are many huge trees, both as to ſtature and greatneſs, remaining in many places, that if they had, in their youth, met with ſuch disbuddings and prunings as I have adviſed, would have been ſurpriſingly beautiful and of great value; whereas they have been allowed to fork and run out into great arms; which is an irreparable misfortune, ſince the timber of the elm is both ſtrong and of a fine colour, and prettily veined, very little inferior to the Mahogany, and ſome of the Weſt-India woods, ſo much demanded for tables, chairs, cheſts and cabinets.

*Raiſed.* This kind is propagated by the ſeed, which they carry plentifully every year, and is to be gathered about the beginning of June, which is the ſooneſt they ripen in this country, tho' Mr. Evelyn and his followers affirm, that it is ripe in the beginning of April.

The way of ſowing it, is in a bed well trenched and finely raked; then thruſt off ſome of the ſurface of the bed with the back of the rake; lay the ſeed over all the bed, as the gardeners do when they ſow carrots; then draw the earth over the ſeed. When the plants have ſprung half an inch, it will not be amiſs to ſift on ſome fine earth upon them, to fix them the better; keep them free from all weeds for two years; then ſet them out for good and all.

*Soil.* I have always found this tree ſhyer as to the ſoil, than either the beech or the oak, and I cannot ſay that they thrive unleſs upon good ground; when ſuch is trenched and kept clean, they proſper

proſper and thrive exceedingly: but, in bad ſoil, they are naſty, ſcabbed and hide-bound things, ſo that, in my opinion, it is loſt labour to plant them there.

Another kind of this tree is, what I have heard called the *London Elm*, which grows in great plenty in all the hedge-rows about that city: the long walk at Holland-houſe, and the incomparable one now hedged at Kenſington-garden are of this kind: it hath a much ſmaller leaf than the one I have been writing of. The cuſtom in theſe places is to cut off all the ſide-branches cloſe by the body of the tree, and only leave a very ſmall head, ſo that in winter they look, in a manner, like a very high hedge, and, in the ſpring, are as bare as a May-pole, except the very ſmall head; how oft they repeat this operation, or what they make of the prunings I cannot tell.

*London Elm.*

Of this tree they make great uſe for pipes for carrying in water to the town, and preſcribe ſeveral other uſes for it: but as my deſign is to teach the raiſing of trees in the cheapeſt and eaſieſt way, I refer my readers to Mr. Evelyn, or the carpenters, for the uſe of every tree.

I believe this one doth not carry any ſeed; but it is eaſily raiſed by layers and ſlices taken from the roots, or by ſuckers.

*Raiſed.*

Mr. Evelyn adviſes to propagate them after the following manner: "Take truncheons off the "boughs, and arms of elms, cut to the ſcantling of "a man's arm, about an ell in length: theſe muſt "be chipped on each ſide oppoſite, and laid in trenches about half a foot deep, covered two or three "fingers deep with good mould: the ſeaſon for this "work is the end of January and beginning of February, if the froſt do not hinder; and after the "firſt year, you may cut or ſaw the truncheons off "in

"in as many places as you find cauſe, and as the "ſhouts and rooted ſprouts will direct you, for tranſ-"plantation."

Another method propoſed by him is, "Lop a young "elm, the lop being about three years growth, in "the latter end of March, when the ſap begins to "creep up into the boughs, and the buds are ready "to break out; cut the boughs into the length "of four feet ſtanding, leaving the knot where the "bud ſeems to put forth in the middle; enter theſe "ſhort pieces in trenches of three or four inches deep, "in good ground, *that is*, in good mould well trod-"den, and they will infallibly procure you a good "crop." Beſides Mr. Evelyn's authority, I have been adviſed to the ſame by a gentleman who pretends to be a great planter; but as I have only tried them this laſt ſpring, I cannot promiſe for the ſucceſs as to this kind of elm.

As this kind is not raiſed in the ſeed-bed, I believe it will be proper to have a nurſery ready to ſet them in for two years: this is a piece of ground trenched, and made free from ſtones, roots and weeds: in this ſet your young elms, thus raiſed, at a foot's diſtance every way; and after two years ſtanding tranſplant them for good. *Nurſery, what.*

There is another kind of this tree, called the *Dutch Elm*; this will grow upon much coarſer ground than either of the other two. I am told they never grow to thirty feet in length; but as all I have are young, I have not experience of its ſize; neither do I know if it is of any uſe. It puts out a great number of trees and ſuckers, ſo that it ſpoils all graſs-walks within the reach of its roots. Some uſe this kind for hedges; but I think neither it nor the Scots Elm fit for that purpoſe, *Dutch Elm.*

purpoſe, their leaves being too broad and diſagreeabl rough.

One thing I had forgot, which I ſhall ſet dow here, as it is neceſſary for all the trees I have name or am to name, that, when they are ſet out for goo and eſpecially at two years old from the ſeed, care b taken to keep the graſs and weeds from growing bout the roots, otherwiſe they may either choak ſtrangle the young plant; and this I adviſe to be don with all the young plants, till they come away heartily, that neither weed nor graſs can ſtop them their growth. I come now to

## The ASH,

Only raiſed by the ſeed, called the Aſhen-ke They are ripe in October, and ſhould then be g thered and laid in a bed, as I directed about the El ſeed, and covered the ſame way: this

*How managed.* do as ſoon as they are gathered: but th they are ſown this ſoon, they do not pe above the ground till the ſpring com twelve months after. I chuſe to manage them th way rather than be at the trouble of laying them ſand for a year; after they appear the

*Plants.* ſhould be let ſtand, and carefully weed for two years, and then ſet out for goo I adviſe the ſame care in keeping them clean about t roots, the diſbudding and pruning them, as

*Soil.* the other trees I have mentioned. It is ha to ſay any thing of the ſoil they moſt delig in; for tho' the rich one is beſt, generally, for all kin of trees; yet ſometimes an Aſh is ſeen to thrive ve well where it is quite otherwiſe, tho' within two yar of the ſoil there are poor hide-bound ſticks. I kno not if cutting ſuch by the ground in the ſpring ma

make them thrive the better, but I ſhall try it. This makes me wonder why they who have wrote about woods, ſhould lay it down as a rule, that, in planting woods, every third tree ſhould be aſh, ſince it is a tree very ſhy, if the ſoil is not proper for it. In good ground, trenched and kept clean, they thrive prodigiouſly: it is long in putting out the leaf; but holds it long the ſame ſeaſon: they ſhed them as early as other trees.

It is of great and general uſe, and therefore it ſhould be encouraged where the ſoil is proper for it; but ſhould not, they ſay, be planted near corn-fields, its roots running within reach of the plough, and its leaves taint the graſs. This tree carefully managed, as I have directed, may be brought to great height and largeneſs, and of conſequence value. The next I ſhall take notice of is

## The WALNUT.

Only propagated by the nut: they talk of different kinds of it; but as all we get are from France, they ſeem to be of the ſame kind.

This tree, of all others, ſhould, if poſſible, never be removed, ſince it ſuffers more by it than any tree I know; but the vermin are ſo fond of it, that it is very hard to preſerve a ſingle nut ſet, to ſtand from being eat by them: ſo I order them to be managed as the oak. The ſide-branches and buds of this tree ſhould be carefully taken off; and, what I can never ſay too much againſt, forking ſhould be prevented; for no tree is more apt to fork than this one, and none loſes more of its value by doing ſo. This is the moſt valuable tree we have; had we greater plenty of it, the furniture of our houſes, ſuch as bedſteads, chairs, *&c.* that are now commonly made of

beech, would be much handſomer, and more durable. Beſides, it is much ſought after by the cabinet-maker, ſo that I wiſh it were more propagated. The next I ſhall treat of is

## The CHESNUT:

Which, tho' it can be raiſed from layers, comes much better from the nut, and ought never to be removed; but as that is ſo difficult to do,

*Set.* the next beſt way is to manage them in all things like the oak.

It is very apt to put out ſuckers from the roots, and many ſide-branches, both which ſhould

*Pruned.* be carefully taken off; for as it inclines to ſpread much if this is not done, it is not eaſy to get it to a great height, which, if care be taken of it, may be done.

Why a late reverend author hath placed the chesnut among the leſſer kind of trees, I know not, ſince I have ſeen them very high, and proportionally large; and that there is the remains of one in England, that, I think, hath been looked upon as the greateſt tree in it.

It is the beſt under-wood except the mapple, and therefore is good coppice.

*Soil.* It loves the ſame kind of ſoil as the walnut, which doth beſt upon a rich land.

Whether theſe nuts produced in Britain will proſper, I have never tried; for, tho' ſometimes they are perfectly formed, grow hard, and ripen very well, yet theſe that come from France

*Spaniſh and French nuts beſt.* Spain are much fairer; ſo that I always chuſed to ſet them. I have ſeen a room which a gentleman wainſcotted with chesnuts of his own planting, which ſeem

to me very pretty: and Mr. Evelyn tells many Uſes of them; but, as I ſaid before, that is not my buſineſs. There is another kind, called, *Uſes.*

## The HORSE-CHESNUT,

Raiſed by the nut, which is exceedingly better. I think it is the moſt beautiful tree I ever ſaw. It hath a clear, ſmooth, ſhining bark, and naturally grows upright; hath the broadeſt leaf of any tree we have. It carries a fair flower, moſt of them white, tho' I hear ſome have them red, delightful to look at, and is ſucceeded by the nut; but then it hath the misfortune to be very brittle, and cannot reſiſt the wind, that ſnaps it over when it is in its greateſt beauty; yet when cut hedge-ways, as one at Highgate, it ſtands the ſtorm, and grows to a tolerable height. But then the hedging of trees, in my opinion, takes away much of the beauty they have in their natural ſhape. It puts out its leaves among the firſt of our trees; but I never underſtood that it was of any kind of uſe; yet it is very ornamental, and I think, for that reaſon ought to be propagated, but not in woods, like the ſweet cheſnut. I come now to *Beautiful.* *Fit for hedging.*

## The PLANE.

I believe this is what in England goes by the name of the Sycamore; and, as far as I can obſerve, it ſeems to have been the favourite tree of this country in the time of our forefathers; for there is no old ſeat, gentleman's houſe, or any place where trees are ſet to grow, but the plane-trees are the moſt numer-

ous. It is raiſed from the key, as the aſh, but with this difference, that it ſprings up ſooner after ſowing, and the aſh lies a year longer. When managed, as I have adviſed of the other trees, it riſes to a great height and greatneſs, carries a fine broad leaf, and puts out, early in the ſpring, one kind a fortnight before the other, which is all the difference I know between them. It makes a fine ſhade, and never yields to the winds, unleſs raiſed, when young, under the ſhade of a wall that makes it ſhoot too faſt, and ſo when it gets above it, it is too weak to reſiſt the wind.

*Soil.* It is ſhy as to the ſoil, but will thrive where the elm doth. I have ſeen a room in the ſame gentleman's houſe who wainſcotted one with cheſnut, done with this tree. It looks very well and takes a good ſkin, but I am told it is very ill to work, and takes the worm very ſoon, unleſs varniſhed on both ſides. I am lately told, it laſts longer driven in the earth, by way of poſt, than any other timber that hath been tried. Mr. Evelyn and Mr. Cook ſay, that deer will not touch it, tho' in a park: this I have heard likewiſe denied; but theſe authors ſay the ſame of

## The HORN-BEAM.

They commend the raiſing of this tree from ſuckers or layers; but as I raiſe all by the ſeed that carry any, I never tried that way. It lies as long in the ſeed-bed before it peeps as the aſh, and ſhould be ordered the ſame way. It is ſaid that it comes to be a large tree, but all of them in this country are but young; nor did I ever ſee a tall one of them; for where they are in greateſt plenty, as in Hertfordſhire, they are all, as far as I could obſerve, pollards; and I have ſeen it putting out freſh ſhoots from the lopped heads, when

*Raiſed.*

the

the tree was quite hollow, and only a ſhell left I hear the timber is of uſe, but I know not for what. They do well in hedges, and keep feathered to the bottom, and, like the beech, keep or carry the withered leaves till the new ones in the ſpring do thruſt them off. This makes them a great ſhelter to the trees that are to be ſurrounded by a hedge of them.

When deſigned for this uſe, they ſhould be clipped in the ſides only, and neither pruned nor diſbudded, but, if for a tree, ſhould be both, and never ſuffered to fork. I now proceed to

## The SERVICE-TREE.

I am told of many kinds of this tree. I have but one, which hath a dark green leaf and pretty broad, and white on the underſide. It carries a cluſter of white bloſſoms, ſucceeded by one of red berries.

They are raiſed by the fruit; and make an agreeable variety when mixed with other trees: but whether it comes to be a large tree, or is of any uſe, I am ignorant; tho' I have heard of one kind of ſervice-tree that is of as much value as the Mahogany. I make it my buſineſs to get ſeed of every tree I hear of, to make trials; but I go on to *Raiſed.*

## The BLACK-CHERRY.

This is called the Geen here, and is of two ſorts: The fruit of the one is red, and of the other black: Both, if large, are very delicate, and much improved by grafting. It riſes to a great height and greatneſs, and is not ſhy as to the ſoil it is ſet in; hath a fine ſhining bark, is in great beauty in the end of April, and beginning of May, when it is all covered with white bloſſoms, and *Soil.*

in July with its fruit, which it ſeldom fails to carry. Mr. Cook talks much of this tree. It is very brittle; yet 'tis ſaid they make frames of it to their ruſh-bottomed chairs in Holland. It ought, in my opinion, to be propagated. I ſhall now write of a very beautiful tree,

## The QUICK-BEAM,

For ſo it is called in England, but here the Rowan or Rhoddan-tree. The branches of this tree grow almoſt all upright, ſo that it is difficult to keep it from forking, yet may be done with care. It hath a ſmooth bark, a narrow leaf, and carries a fine cluſter of flowers in May, that makes a fine ſhow? and the plentiful crop of red berries which hang on it, gives it a very rich look, and is a great relief to the thruſhes and black-birds.

*Raiſed.* It is eaſy raiſed by the berries; rub off the pulp, and ſow the ſeed in the ſeed-bed. Do the ſame with the black-cherry and ſervice. The quick-beam ſeed is two years in the bed before it peep, as the aſh and horn-beam. I never ſaw but one of this kind that was large; it had been cut down, and came up in three great branches from the root, and therefore I doubt nothing of their growing great and high enough.

It thrives almoſt in every ſoil, and proſpers on rocks where there is very little thickneſs of earth. I am told by a friend, that, unleſs the earth is now and then ſtirred about the roots of them, they grow hard bound and unthriving; but this, ſhould it happen, would be eaſily remedied, I think it ought to be more planted: It hath been little made uſe of in England till of late, that they are got into the gardens of Kenſington

ſington. Mr. Evelyn tells its uſes; but I ſhall name one which he doth not mention, which is, that the bark ſells to the tanners with that of the oak.

I go now to a tree that I cannot charge my memory with having ever ſeen in England; nor did I even ſee it ever mentioned in any author, which I have wondered at; it is called

## The LABURNUM, OR PEASE-COD-TREE.

I ſhall firſt deſcribe it, and then tell how it is raiſed. It hath a yellowiſh thin bark, with leaves almoſt of the ſame colour, ſhaped like the Trifoil. It puts out a flower like the lilly-aſh flower; only it ſtands up, and is white or purple, but the laburnum is yellow, and hangs down like a bunch of grapes.

I have ſeen ſo many on a tree of mine, *Fruit.* that it looked as if it had been all yellow. After the flower there comes as many ſmall peaſe-cods as there were bloſſoms, full of ſmall peaſe, which when ripe are gathered and threſhed. They do not value what ſoil they are ſet in, nor do they require much looking after: They are ſown in a bed, and removed at two years, and *Raiſed.* then managed like other trees. The hares are ſo fond of them, that I ſet a great many of them to keep theſe creatures from my other trees: They are vaſtly bitter; both the bark and the ſeed are a ſtrong vomit. I have of them pretty high, and, I believe, with care may be trained up to great trees.

The timber is very hard, and of a fine colour, *viz.* a bright yellow with blackiſh purple veins. Were it large enough to be ſawn into planks, it would make moſt

moſt charming tables. The quick-beam and this tree in a row, planted alternately, have very good effects. I go on to

## The MAPPLE.

It is to be raiſed from ſuckers and layers, but beſt from the key, like the ſycamore; which lies as long without ſpringing as the aſh, and ſhould be managed in every thing like it.

Tho' we have few large trees of this kind in this country, yet I have ſeen them very great in England. 'Tis a beautiful tree, but the dropping is ſo pernicious to every other plant, that no tree will grow under it; tho' the mapple itſelf will thrive under any thing, the fir (which is the very worſt for under-wood) not excepted.

I have little experience of this tree myſelf. Mr. Cook ſays, it affects dry ground moſt, or a bank.

Mr. Evelyn is very eloquent in the praiſe of this timber, and is very extravagant when he ſpeaks of the high value which the ancients put upon tables of it. I know it is much ſought after by the cabinet-makers, and makes a fine hedge in a wilderneſs, changing the colour of its leaf twice at leaſt every year. I proceed to

## The LIME.

It is beſt raiſed by the ſeed, tho' I could not raiſe any that way; the reaſon I take to be is, that it doth not come to perfection here, and not every year in England. I have often given commiſſion to get it from Holland, but theſe I employed always neglected it; but I have raiſed many by layers. There are two kinds of this tree, both of which are raiſed the ſame way

the one with a large round leaf, and the twigs almoſt as red as coral in winter. This I prefer to the other, which hath green twigs, and the leaf more pointed, and leſs.

It ſhould be much pruned; yet it ought to be done with the greateſt diſcretion: for if it is allowed to grow thick in the head, the wind may harm it. *Pruned.*

It makes a fine hedge, either feathered from the root, and then it may be ſet at two foot diſtance, or ſet from ſix to ten, trained up to what height you pleaſe, with a clean ſtem, and then hedged above that, and either way very beautiful. Some rear them to ſtandards, and then clip them in pyramids; but I do not like that way, as it looks too conſtrained: beſides the natural ſhape of the lime looks better. It grows to be a large tree; tho' I think it is more for ornament than uſe, yet Mr. Evelyn finds many. I now ſhall ſay ſomething of *Uſes.*

## The HAZEL,

Tho' I reckon it rather a buſh than a tree. They are raiſed from the nut, and managed like the other nuts I have mentioned; but as they are of much leſs uſe, I have been at leſs pains about them. They ſerve for under-wood, and for binding up faggots, and are of great uſe to the ſieve-maker; but after all, the demand for this plant is but very ſmall. Dry ground is recommended for them, but I am ſure I have ſeen them in a quite different ſoil. *Uſes.* *Soil.*

I ſay nothing of the two kinds of plantains, tho' they are coming in requeſt here, as I have no experience of them. I therefore conclude this chapter, and begin

CHAP.

## CHAP. II.

## Of AQUATICKS.

### The BIRCH.

AN amphibious tree, that thrives upon rich, poor, wet, dry, ſandy or rocky land.

It hath a ſeed, but I am not skilful to direct how to manage it; but as ſoon as I am, I ſhall let it be known: The method I have hitherto taken, hath been to gather them in the woods, where they come up plentifully from the ſhaken or blown ſeed; but as the proprietors of theſe woods are not careful enough to keep cattle from paſturing in them, they are moſtly eaten over, and therefore I was obliged to cut them cloſe when I planted them: But as they begin to come up in my own woods, where no cattle come, I hope to be ſupplied that way, tho' the raiſing them from the ſeed ſhould miſgive, which I wiſh it may not, becauſe theſe thrive in whatever ſoil.

It ſometimes comes to be a great tall tree; it is excellent for coppice, ſmells ſweetly after rains; and the tree is more aſked after by the country-people, both for their houſes, ploughs and utenſils of huſbandry.

The way I take to remove them, is to draw them with great care, either before or in autumn, and ſet them where they are to ſtand for good. After they have ſtood for a year, cut them cloſe by the ground in the ſpring, this will make them riſe in tufts, and they may be eaſily reduced to one ſtem, and ſo brought to a tree.

By topping them in the ſpring, they extract a liquor, which, after fermentation, becomes a ſpirituous delicious

delicious wholeſome wine; but as I am not writing about brewing, I ſhall refer you to the two authors I have ſo often quoted, and to the tranſactions of the Royal Society, for the receipt of this wine.

I have planted many of this kind of tree, and intend to plant many more of them, if I live, ſince I think them more profitable than

## The ALDER,

For which tree I have laid out more money than for all the reſt about this place; for I got them from Holland, and was not only impoſed upon as to the price, but had the misfortune to employ unſkilful people to plant moſt of them: They ſet them ſo deep that they fretted at the top, and died afterwards; ſo that they were twice cut over: They are more backward in thriving than any tree about this place; yet, I believe, there are more thriving ones, than, were they ready for the axe, I could get ſold. It is a handſome tree, with a broad, dark green leaf.

I know not of what value the timber is; but the branches cut, then fagotted, and laid in the bottom of drains for carrying off water, and whins or furzes laid a top of them, makes it ſo that the ploughs go upon dry ground: This I have often done. The ſhade of this tree doth no hurt to the graſs.

I have been ſo little pleaſed with this kind, that I have not been at the trouble to know how it is raiſed; only I have cauſed gather them amongſt the old ones, as I do the birch. They ſay they will do by cuttings laid ſome time in the water, then ſet like willows.

They grow both in wet and dry ſoil. Mr. Evelyn ſays they are of great uſe: the beſt I know of I have told, and that other one of planting them upon the banks

banks of rivers, to hinder the water from making breaches, the roots of it keeping the ground firm. I ſhall now ſay very little of

## The POPLAR.

We have few poplars of any ſize in this country that I know of, but having heard much of their height and greatneſs, I got ſome cuttings of them: They hitherto proſper very well: They have a whitiſh bark and green leaf.

What their uſes are, I do not know. They are raiſed by cuttings as eaſily as the willow. I wiſh by the ſame means I could raiſe

## The ABELE.

But as yet I know no other way than by the young plants, that run from the roots of an older one, or where there hath been once a nurſery of them; for were they never ſo carefully removed, yet new ones ſtill come up: Or if an abele of a middle age is cut down, the ground about it wrought, and no cattle ſuffered to come near it, a nurſery of them may ſoon be got. I think the talleſt trees I ever ſaw were of this kind, and carried up a great body with them. I know none that runs up ſo quick as this does, planted in a bottom where it is ſheltered, but if expoſed to the winds, yields terribly. It makes an agreeable variety, mixed with trees of a deeper green; for the bark and leaf are the whiteſt of any in this country. They are looked on as of little uſe; but an old gentleman told me, that, in a barn which he had roofed with aſh and elm, he put on ſome abele, which lasted ſo well, that when the other were rotten, and he was forced to renew the roof, he left the abele ſtan[ding] in

ing as being quite ſound. I hear they make great uſe of them now in England.

They thrive ſometimes in ſpouty, and they do very well in ſandy ground, where ſcarce any thing can well be expected to grow, tho' ſome trees will, as I ſhall ſhew by and by. I own I am very fond of the abele, and am reſolved to propagate them as much as I can. Now of

## The ASPIN-TREE,

OR

## QUAKING-ASP,

As it is called in this country; it is a tree that I would not have given place to in my papers, were it not that I am writing to encourage the propagation of trees; and therefore think myſelf bound, as an honeſt man, to give every one, who is at the trouble of reading what I write, warning, that I reckon it time thrown away beſtowed upon this weed, and therefore I root them out wherever I meet with them in my grounds. I heard them ſo much praiſed, that I was at a great deal of trouble to procure a quantity of them. I find them ſhyer to take with the ground than the beſt tree; but if once they do, there is hardly any poſſibility of rooting them out. They never, that I ſaw, riſe to any tolerable height or ſize. They decay by the time that other trees come to look well. I know of no uſe that they are for; but their deſtructive nature I can atteſt, ſuch as running thro' the whole ground, ſpoiling the graſs and every thing elſe near them; ſo that, were my advice taken, they who are ſo unlucky as to have them ſhould root them out, and none ſhould attempt to poiſon their grounds with ſo pernicious a weed. Next of

## The WILLOW.

Of this there are innumerable kinds. Mr. Evelyn names ſo many, and I have been ſo confuſed in reading him, that I could not know which of them to chooſe, till I had quite forgot what he ſaid; and therefore I ſhall only mention what I know by experience are the beſt kinds.

The only way I know of raiſing them, is, by cuttings, either in wrought ground, or by making holes with a ſtake, ſharpened at the end, and drove into the ground: When the ſtake is drawn out, ſet in the willow, and fill the hole round it with earth to keep it firm.

The beſt kind I know to be raiſed to trees, is, what we call the Huntington Willow: It will grow almoſt as high and great as any tree, if it is allowed to run up, and care taken to keep it from forking and ſide arms; or, if lopped above the reach of cattle, it will ſoon put out a large head, ſo that, in four or five years at the longeſt, theſe ſhoots may be cut; and, if they have room to ſpread, from every two trees a cart-load of large branches may be got, and ſo on for every four or five years. What advantage would this be to thoſe who cannot have coal and peat, but at a very great diſtance and expence? I think it is worth the conſideration, tho' I had never weight enough to perſuade any in that ſituation to try it, tho' they have ground very proper for it. Nor doth the willow, thus managed, and ſet at a diſtance, at all hinder the grazing. Stakes of ſeven or eight foot long, or as high as to be without the reach of cattle, may be ſet in February or October, without any heads, and, if the ſide-buds are rubbed off near the top, all the ſap will run up, and ſoon ſet out a head: But the diſbudding ſhou

ſhould be continued for ſome years, till the bark grow ſo firm as not to put out any more: This is neither great expence nor trouble, and might be of great advantage, and ſave the lopping of more valuable trees; for it burns very well, nor do I doubt but the timber may be of uſe.

I have another ſort which might be managed the ſame way, tho' not altogether ſo quick a grower, and which, ſome of my workmen ſay, is almoſt as uſeful as the oak, for fork, ſhovel, and ſpade handles, nay, for ſome parts of carts.

Theſe two require a good ſoil, as doth the bay-willow, with a bright, ſhining, green leaf.

There are many dwarfs among the willows; but theſe I have mentioned may be called trees. I was once over-perſuaded to lay out too much money upon trenching ground for planting willows for hoops, as a profitable return; but the yearly rubbing off the buds was a conſtant labour, and, when they were cut, I did not get ſo much as to make me think it worth while to continue the trouble.

The very worſt kind of willow is for the uſe of the thatcher, and for binding faggots, beſides a ſmall kind of it for making baſkets.

Before I begin to ſpeak of evergreens, I ſhall give ſome ſhort directions, beſides what are already mentioned, as to

## The Method of PLANTING,

In which I ſhall deliver the methods I took myſelf, and which I have ſupported by my own experience.

I firſt trenched the ground, and then ſet the plants, ſmall and young; I think from the ſeed-bed beſt. I ſet them cloſe to one another, and the youngneſs of the plants made them take root ſooner than if

they had been older, and the ground became natural to them; the ſetting them cloſe together made every one ſhelter the other, and ſo riſe faſter: I then ſowed turnip-ſeed amongſt them; this kept down the weeds the firſt ſummer, and the turnips being dug in the winter, did great ſervice to the trees, and made the next cleanſing eaſier, ſo that the trees grew ſo faſt, that very much cleanſing was not neceſſary. To this it hath been objected,

OBJECT. I. Trenching is expenſive, and keeping the ground clean from weeds and graſs, coſts labour, and, of courſe, money.

To this I anſwer; Trenching is to be done but once, and, as what I have ſaid of the turnip is true, I hope that will not be ſo great a labour. I own it is expenſive to trench ground; but, when one ſees the advantage it is to the growth of their trees, I hope they will not grudge it to their wilderneſs, or near their houſes; eſpecially ſince the other methods I have propoſed for planting, are ſo much cheaper than what hath been put in practice by any body but myſelf.

OBJ. II. This way takes a great many plants.

I anſwer, it doth: But I have ſhown, that they are, for the moſt part, raiſed from the ſeed, which is very cheap; that the making ſeed-beds is not dear, and that all trees ſhould be removed for good, after they have ſtood for two years, I mean, after their firſt peeping above ground, ſome lying longer before they appear than others.

OBJ. III. A great many trees muſt be loſt, when they are ſet ſo cloſe; one muſt kill another, ſince the ground cannot afford nouriſhment for them all.

I anſwer, I have proved that the expence is not great, and trees ſet cloſe together, force one another to run up; but, as ſome will always thrive better than others, theſe, with their dropping on the ſmaller ones

mak

make them dwindle, and die at laſt; if ſo, the loſs is but a triſle. But I propoſe to cut down theſe unthriving ones, and perhaps they may ſhoot up for underwood, and by doing ſo, may often yield ſome profit, and can do no harm to theſe left ſtanding, as I ſaid about the oaks. This hath been my practice, and I recommend it; tho' I was adviſed to lift the leſs thriving ones, and plant them ſomewhere elſe; but this I could not agree to; for, in the taking them up, the ſpade muſt not only cut too much from the root of the plant to be lifted, but of thoſe deſigned to ſtand; ſo that I think the cutting of them down the beſt way.

As to the ground's not being able to nouriſh ſo many trees; I have ſeen a nurſery that was quite neglected, where the plants, having been at firſt ſet within a foot of one another, run up to a great height, and were ſo large that they almoſt touched one another; now, by my way of cutting them down, they will not require ſo much nouriſhment; but, if it ſhould be ſuſpected that they draw too much juice from the trees left to ſtand, it is eaſy to cut them below ground, and ſo to kill them.

Indeed, tho' ſome ſoils are of ſtiff clay, and that trenching is of great ſervice to them, the trees ought to be ſet upon the ſurface, and earth thrown upon the roots to keep them fixed, that the roots may take their own way.

Another ſpecial caveat that I would recommend, is, that all four-footed beaſts be kept from your ground. I did well enough to hinder all ſheep and larger cattle, yet the hares did me much harm; but I do all I can to deſtroy them too.

Now, tho' I have all along adviſed to plant the tree from the ſeed-bed, yet it may be neceſſary to plant walks, or carry views thro' incloſures or corn-fields;

in which caſe it will be fit to have plants taken from the ſeed-bed, and ſet in nurſery-ground, and ſeveral times removed, till the roots are ſo uſed to it that they may be tranſplanted, and their branches high enough to be out of the reach of cattle. I own this is a troubleſome work; but, as it is in ſome caſes neceſſary, ſo it is good to be provided for it: But I think ſuch trees, planted this way, ought to be ſtaked for ſome years, both to keep them from being ſhaken at the roots by the wind, and to be kept firm till they are ſtrong enough to bear the rubbing of beaſts. I ſhall ſay nothing of the tranſplanting of large trees in the middle of ſummer, ſince that is a work only to be done with few trees, and no great planter can ever make profit by that way.

One thing more, and I ſhall go to the evergreens.

If an oak, aſh, or elm, is crooked, ſlit the ſtem quite through the bark, and it will grow ſtraight. Where any tree is eat by a beaſt, cut it off below where it is bit. I ſay nothing to the way of laying trees, or taking off ſlips with a little of the mother's root; nor of ſuckers; becauſe every author hath a chapter upon this head, and no gardener but knows it. I proceed, therefore, to the next thing propoſed, viz.

## CHAP. III.

### Of EVERGREENS,

### PARTICULARLY,

### FIRS.

AS I believe I have raiſed and planted out more of this kind of tree than ever any one man did, ſo I have

I have ſtudied the beſt methods of doing it, and have received but little help from any author in the management of it; for they all write ſo ignorantly about it, that I am ſurpriſed they were not aſhamed to ſet their names to a book containing ſuch manifeſt blunders with regard to this one tree. They plainly betray their want of ſkill, nay, probity; and, what is ſtill more aſtoniſhing, that, inſtead of correcting the faults of other authors, they who have wrote laſt blunder moſt: But, as I am not to waſte my time in finding out the faults of others, I ſhall tell the methods I have uſed myſelf, for at leaſt the ſpace of thirty years.

In one of Mr. Bradly's monthly papers, there is a letter, ſigned JOHN EDINBURGH, that might have made them who wrote ſince, ſee, that the author of that letter underſtood what he was about; yet I differ in ſome things from him: And therefore I ſhall trace the fir-tree, I mean the SCOTS FIR, from the time of gathering the ſeed, till the tree is ready for the axe; and, you may depend upon it, I ſhall ſay nothing but what I know by experience to be true.

It is only to be raiſed by the ſeed, which is contained in a cone, or, as it is called here, a Clog, that hangs down from the branches. When I began to plant, my trees ſcarcely carried any, and I was at great pains to get the ſeed. I heard there were fine fir-woods in the Highlands, where the inhabitants bring it in great quantities to ſell in the low-countries, and from whence I for ſome time brought my ſeed. The right way of getting the ſeed out of the cones, is to ſpread them upon a canvas, or ſome cloth expoſed to the ſun, and to have men attending to carry them under cover, when the ſun grows low, or when it threatens rain. The time of gathering the cones is in January or February, ſo that there is but little time for getting out the ſeed before ſowing-time, and therefore

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we are diligent to take every ſun-ſhine to have the cones opened. When we ſee any number open, we put them in a wire-ſieve, and ſhake them till the ſeed falls out: This is done till the latter end of April: then the ſeed ſhould be ſown, as I ſhall ſhow a little afterwards. The remaining cones are carried out of the ſun, and not expoſed to it till the hotteſt time in July and Auguſt; then they open very faſt, and are ſhaken in the ſieve till all the ſeed falls out. This ſeed I keep in tea-caniſters or dry bladders till next ſowing-time, in a dry, cool place, where no fire or ſun comes; but the Highlanders are too lazy to be at ſo much trouble; for after they have gathered the cones, they lay them upon a kiln; this opens them quickly, tho' it often over-dries the ſeed that it cannot grow. I own the cones may be opened before a fire, and little hurt done to the ſeed; but great care muſt be taken that they do not lie too near, or too long before the fire, leſt it be as bad as the kiln, and endanger your houſe, as mine once was, by the careleſneſs of a ſervant-maid: After this I bought my ſeed from an old gardener till my own trees came to carry enough, from whom likewiſe I learned this way of keeping my ſeed over year.

*Seed ſown.*

*Seed preſerved.*

In the end of April, I have ſeed-beds prepared, by trenching them pretty deep, and made as free from weeds, graſs-roots and ſtones as poſſible, and the earth made very fine. The ſoil ſhould be of a middle ſort, neither clay nor ſandy, neither too rich nor too poor; the earth turned off with the back of the rake, as our gardeners do for carrots; then the ſeed ſown ſo thick as to cover the bed; and laſtly, the earth drawn over till all the ſeed is covered: then in a few days I can

*Soil for a ſeed-bed.*

ſee

ſift on ſome more fine earth. The next care is to preſerve it from the ſmall birds, who are very fond of it, and more ſo when it peeps; for the young plants bring up the husks of the ſeeds upon their tops. I once had frames, the breadth and length of the beds, covered with nets; but of late I have boys that ſit by them from ſun-riſing till ſun-ſetting, till they are all come up, and the huſks dropt off. If the plants come up thick, as they ought, there will be no need of weeding them for that year they are ſown; but if any appear, they muſt be pulled up with great care, leſt, with the weeds, the young plants are alſo drawn. Before the winter I cauſe throw on ſome chaff or ſaw-duſt that hath lain ſome time, or what is beat from the flax when dreſſed; this preſerves the plants from the froſt, and may hinder the ground from ſwelling, which if it do, it is apt to ſpue up the young plants. In theſe beds they ought to ſtand two years, for example, from the latter end of April 1734, till the ſeed is ſown in March 1736: From thence to the end of April 1736, they ought to be managed in the following manner: When you take up your young plants, let there be ſtanding by a tub of earth and water, mixed to the conſiſtency of pap; in this let the roots be dipped: and on the roots of every ſix or ſeven handfuls of plants, laid in a baſket, lay a handful of this pap, to keep the roots from drying, which they are apt to do with either the ſun or wind, and one man can carry a great many this way. Formerly I had pits ready dug, and the earth with the turf uppermoſt filled on, and then ſet the plant with a dibble, taking care to ſet it no deeper than it ſtood in the ſeed-bed; and this is a very neceſſary caution in planting,

*Seed-bed weeded.*

*Kept from froſt.*

*How managed when drawn for ſetting.*

ing,

ing all kinds of trees; for deep ſetting is one of the greateſt errors: But now I have got a quicker way.

*How the firs are ſet out.*

I make one to go with a ſpade, who ſtrikes it into the ground, preſſes it backwards and forwards till the ſlit is made wide enough to receive the root, which the man with the basket ſets in, and then with his foot preſſes the ſlit together. This way however will not ſucceed but where the ground is bare or poor; for if it is rich, or the graſs rank, it may ſmother or ſtrangle the plant: in that caſe the pits muſt be uſed, and, as I have adviſed about other trees, the graſs and weeds muſt be taken away from the roots, for at leaſt two years; againſt which time, I think they will proſper, if cattle get not at them. But I believe I have found out a better way for this, and all other trees of two years from the ſeed, which is, If a new plantation is deſigned, where the land is rank, the ſurface ought to be pared with a paring ſpade, and the turf carried off to be mixed with lime, or ſome other manure for enriching the corn-land. The ground being thus pared, the plants may be ſet as before directed. I have uſed this way with ſucceſs; for before the graſs and weeds can ariſe, the trees are out of danger from them. Others adviſe the letting firs ſtand three years in the ſeed-bed, but I know it is wrong, having tried it, and they almoſt all died. Some adviſe removing them to nurſery, a needleſs expence! ſince they thrive better the other way, are eaſily carried, and ſave labour, time and trees.

The diſtance I ſet my firs at is never above five feet, when I plant oak, beech, &c. amongſt them; but, when alone, nearer, in no regular way; for I don't think it a valuable tree. They look pretty at a diſtance in thickets, and in winter, and will thrive in the worſt ſoil, even in dead ſand.

It is ſurpriſing to ſee how faſt oaks and other valuable trees will grow, when planted under the ſhelter of firs: but I take particular care that the firs do not hurt theſe trees, by leaning on, or over them; this I prevent by pruning the branches of the firs every winter, after the ſap is at reſt by the firſt froſt: but, where both they and the other trees thrive well, I cut down the firs to make room for the others. I was once a great enemy to pruning of firs; becauſe what we get from Norway never meet with that treatment; but, ſince it would entirely ſpoil the trees amongſt them, if they were not pruned, I do it; but, where firs ſtand cloſe together, and no trees mixed with them, I let them prune themſelves, which they do for want of air, and by rubbing upon one another: but, if they muſt be pruned, it is fit to begin only when the branches are ſmall, that the bark may the ſooner cover the ſcars; and, as they never ſhoot out on the ſides any more, this work is to be done but once in one place. What I propoſe is, after a fir has been ſet out for three years, to begin and cut away the undermoſt ſtories or tiers, for that is the form they grow in, and after that take one off every year.

*Beſt firs.* I now gather cones from the firs that have the reddeſt wood, eaſy to be known from their having been pruned; for, let people ſay what they pleaſe, as to there being but one kind of Scots fir, and that all the difference we ſee in the timber is owing to the age of the tree, or the ſoil it ſtood on, I am convinced it is otherwiſe: for I once cut down ſome of about forty years old, which I thought grew too near my houſe, and ſtood within a few yards of one another, ſome of them were red and hard, others white and ſpungy, tho' the ſeed was all of one parcel, ſown in the ſame ſpot, and tranſplanted the ſame day.

Authors

Authors ſay they ſhould be ſown thin, ſix ſeeds i half a foot ſquare; but I am never pleaſed if mine com not up as thick as creſſes. They likewiſe adviſe re moving them from a ſeed-bed to a nurſery; but, I hop what I have ſaid will convince you that the way I tak is much better and cheaper. It is ſaid that they wil not grow on a ſandy ſoil, but I can prove, by hundred of thouſands, that they do on dead ſand, that ha ſcarcely one pile of graſs upon it.

That there are many kinds of firs, I do not deny, ſince I do not know if what grows in Norway be th ſame with ours. I am of opinion, that what come from Sweden differs from the Norway fir; and w have both the pitch and ſilver fir very unlike our kind but to be raiſed the ſame way. Joiners diſagree abou the goodneſs of the timber of the two laſt.

GREAT PINE. I have tried the Great Pine with littl ſucceſs; whether it was owing to the cl mate, or want of skill, I know not; bu PINASTER. the pinaſter, managed like the fir, dot very well.

EVERGREEN-OAK, and CORK-TREE. Of other evergreens that grow large there is the evergreen-oak and cork-tre I have been told, that theſe two tree managed like the oak, grow large enoug to be fit for ſhip timber; but whether they wi do ſo in this country I cannot hitherto pretend t ſay. I have raiſed a great many of them, but the are all of them very young; neither did I ever ſe a large one but once, and there was a high wall b twixt it and me; but they are much praiſed of lat I have raiſed a great many of them from the ſee but they are very ill to tranſplant, and the vermin a very fond of the acorn; and, as I don't think th

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oldeſt I have ſeen in this country are pretty even in winter, I am not fond of them.

I doubt not but the cedar of Lebanon, had we the cones, would proſper as well in this country as the common Scots fir, ſeeing I have ſeen them in very much expoſed places: For the Bermudas cedar, all I ever ſaw of them ſeem to be dwarfs, and a kind of junipers. CEDAR.

The yew, if not kept down by formal clipping, arrives to great beauty and value; but it requires many years, beſides care in the management, to bring them to a tolerable ſize; and therefore few care to plant them, ſince, for theſe fifty years paſt, the clipping, and, I think, the ſpoiling of them, has been in practice. I have now cut all the feathering off my yews, and reduced them to ſingle ſtems; how they will ſucceed I cannot tell, but I ſhall never try to put any evergreen in any ſhape but its own, unleſs in a hedge. YEW.

As to the holly, when it is trained up to a tree, it is a very beautiful plant; but is likewiſe ſpoiled by clipping. I have obſerved, that wherever there is a large yew or holly tree, every one is liberal in their praiſes; but, becauſe clipping them is ſo much in faſhion, none has courage enough to plant them for trees; though I not only do it, but have reduced my pyramids, and hope to bring them to their natural ſhapes. HOLLY.

I intend to try the training of the cherry-bay, and the laurel, to trees; and I have ſome young ones that give me great hopes of ſucceſs. There are, beſides, the ſweet-bay, phylera, and alaternus; theſe I intend to raiſe to as great a height as I can. I have none of the large box here, but I intend to get ſome. We have the lauruſtinus and arbutus, which are the only buſhes here; and a few larch, which I believe may be worth while to BAYS.

propagate: I neither like the Swediſh nor common juniper, far leſs the Savine. I ſhall now ſpeak a little of

## A WILDERNESS.

As it is only raiſed for ſhade and ornament, and is laid out in what figure the owner pleaſes, there can be no rule given: They have not been long introduced into this country, and the way they were firſt laid out was, They firſt pitched on a center with ſtraight views from it, terminating in as fine a proſpect as could be had; then were there ſerpentine walks that run thro' the whole, hedged like the ſtraight walks, and the angles planted with variety of different trees; though now they are weary of the hedges. But people who make it their buſineſs to lay out ground for gentlemen are, in my opinion, very unfit for it, for they are too formal and ſtiff; beſides, they make every thing ſo buſhy, that they croud the ground too much. Were I to plant a wilderneſs, there ſhould be nothing in it but ever-greens, flowering-ſhrubs, trees that carry a fine bloſſom, and a kind of willow, that hath a bark of a bright yellow. In winter, the ever-greens look when every thing elſe is bare. I ſhall now conclude all I have to ſay of trees, by adding ſomething

## Of COPPICE.

I have read of many ways of raiſing them: Some adviſe plowing the ground with a good deep furrow, as a moſt expeditious way; but then this muſt be fallen about, at leaſt a year before ſowing; for the ground will require to be fallowed and made fine: But inſtead of ſowing, I would prefer the raiſing the plants in the ſeed-bed for two years, otherwiſe, ſome ſeeds lying in the ground ſo much longer than others, while the

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are cleaning the plants that are come up, they are digging up with the hoe, or treading down theſe that have not appeared. Others adviſe a ſtill more expenſive way, that is, to leave four foot of ſolid ground, then to dig up four foot next to it, and throw it upon that which was untouched; this will double the ground and make the plants grow better; they ſay the falling of the leaves will fill up theſe ditches, and the roots will run from one bank to another; but, as I never tried any of theſe ways, I ſhall not pretend to give any advice about them. What coppice we have, ſeem to be natural. I have always diſapproved of cutting all down at a time, ſince, if ſome ſeedling oaks, or other fine trees, were left to ſtand at every felling, they might come to be great trees, without doing harm to the under-wood, ſince the mapple, the ſweet cheſnut, the hazel and the ſycamour, will grow under the drop of other trees. I think a coppice, eſpecially thus ordered, a pretty thing; but, as I want experience of them, I ſhall not go on writing in the dark. And now, having performed what I have promiſed, viz. to let you know my method of raiſing and managing trees, I ſhall next ſay ſomething of fences.

## CHAP. IV.

### Of FENCES.

I HAVE tried many kinds of fences, but, not ſeeing theſe that were made here ſufficient, nor approving the huſbandry of this place, I got a farmer and his family from Dorſetſhire, in hopes that he would inſtruct my people in a right way of incloſing, and teach them how to manage graſs-ſeeds. The firſt fence he made was after this manner: He made a ditch four foot wide at top, and one at bottom; ſix foot from that, he made ſuch another: the earth of both he

threw between them; on the ſides of which he planted thorns, and trees on the top; but I found the cattle ſcrambled up and eat all the plants. I then made ditches as I had done before; but laid the firſt turf on the edge of the ditch, with the green ſide down; upon this I laid a row of thorns at eighteen inches diſtance, leaving about an inch and half of the thorn lying over the ditch, having cut away the reſt; theſe I covered with ſome earth, and laid another turf with the graſs-ſide outmoſt; then a row of thorns upon it; but, tho' they were eighteen inches diſtant from one another, theſe being laid in the intervals, there was but nine inches betwixt them and the row below them. Upon this I laid another turf the ſame way and a row of thorns, or quicks, juſt above the un-dermoſt row, and then threw the earth out of the ditch upon the quicks; and as I did ſo upon the other ſide, the reſt lay betwixt the ditches: But I ſome-times left thirty, forty, or fifty feet betwixt the ditches which I ſtuck full of trees, which I called ſtrips of planting: And, I think, where the fences are ſuffi-cient, that the trees may be brought up, ſo as it will have a very good effect, by beautifying the country, warming the ground, and raiſing ſo many more trees. But I did not find the fences good enough, and there-fore tried this method; I drew two lines, nine feet from one another, the length of the field; lifted the turf without the lines, laid them edge-ways with the graſs-ſide outmoſt; I raiſed both the banks together, filling in the earth that was pared off be-tween them, till I raiſed a ſolid mount of earth five foot high, nine at bottom, drawn in to three and a half at top. On this green bank I ſet hollies upright, and the border they are ſet on being hollowed a little to keep in the moiſture, tho' they grew ſlow at firſt, are now a ſufficient handſome fence. This was for the fence on the road ſide; but, dividing this field

to ſix, I made only half-banks, that is to ſay, they were only graſs on the out-ſide, and the earth thrown up was wrought into a border, and the holly-hedge planted on that: I then made a broad ſtrip of planting, and beyond that, the other fence like the former. But the beſt and moſt ſecure fence I have tried, except ſtone and lime walls, which are very expenſive, is the raiſing the banks, as I have ſet down in the ſecond place, but without quicks; and when it is high enough, fence it up with dry ſtone: But it muſt be obſerved, that this ſtone-wall muſt lean very little to the earth-bank, leſt the weight bring it down: then let it be pared in the incloſure-ſide, which will make it ſlop to the wall. This earth being the beſt, as it is the ſurface, ſhould be thrown over the wall, to make a border either for quicks or holly. Theſe are ſome of the ways I have tried, and the laſt is the beſt. As ſtones are ill to be had, I am reſolved to follow the advice of a ſkilful gentleman living near Windſor-foreſt, to whom I wrote, and got the following advice.

"Since you tell me you are endeavouring to make "your fences good, and as I am in a country, where, "I believe, they are the beſt and ſtrongeſt in Eng- "land, and made and kept the cheapeſt, I ſhall tell "you ſomething of them. You know, that, over moſt "of England, they make much uſe of the ſloe, "or black thorn, and common bramble: I have "long been of opinion, that a mixture of theſe makes "much the beſt fences for clipping. The white- "thorn-hedge, as in gardens, is an expence that far- "mers cannot be at, and without that they will grow "thin, ſo that the ſheep will get through, and the "greater cattle will ſoon follow: beſides, the keeping "of them regular with ſheers, is expenſive, and their "being kept low doth not warm the ground ſo well "as if high. They have ditches, as uſual, and plant "the hedges with white-thorn, mixed with mapple,

" crabs, hazel, elder, oak, elm, and aſh; and the
" banks on each ſide, they ram full of black-thorn,
" bramble, and common briar, to keep it cloſe at
" the root; and this makes ſo ſtrong a fence, that no-
" thing can paſs. It is neceſſity makes them keep
" their fences ſo ſtrong; for they cannot uſe pailing,
" but for a gate, and muſt not diſturb the déer, if
" once they get within an incloſure, but ſtand with
" their arms acroſs, and ſee a herd of them deſtroy a
" coppice-wood, or a field of ripe corn, the incloſ-
" ed land being ſtole from the foreſt; and if they
" don't ſubmit, the keepers will bring an action againſt
" them, which will end in ſhewing a title. I walked in
" lanes a mile long, with a hedge on each hand, ten
" foot high, ſo cloſe with brambles, interwoven with
" crabs, white-thorn, mapple, &c. that no bird could
" get through.

" When they cut over, which they do not ſo of-
" ten, as in countries where their fences are only a-
" gainſt horſes and black cattle, they don't plaſh
" them, which weakens the roots, but cut them a
" foot and an half above the top of the hedge; for
" what is on the banks they cut cloſe; then they ſtick
" in dry thorn-buſhes a-top, to ſtand as high, or high-
" er, than the ſtumps of the white-thorn, crabs, &c.
" and hang upon the ſtumps, buſhes which cover all
" the ſides of the banks; and the roots of the ſtumps
" being ſtrong, they throw out ſhoots of half an
" yard long the firſt year; the ſtuff upon the banks
" runs up upon the dry thorns, which have been laid
" on them as thick as in a ſeed-bed, and in two years
" a ſtag will ſooner take a brick-wall: The gate of
" ſuch an incloſure, if not ſtuck full of buſhes, is
" the weakeſt part of the fence. The black-thorn is
" the beſt for their uſe; it is thicker, tougher, and
" laſts longer.

" A ſtrong hedge, when cut, yields a great deal of
" money,

" money, beſides paying the charges. They make " faggots of the thorn, five or ſix foot long; theſe they " ſell to overſeers of the high-ways, who lay them at " the bottom with ſtones and gravel over them: They " are tough and don't yield to the weight of the wag- " gons, and laſt many years without rotting——The " large white-thorn, mapple, &c. make good faggots, " and the ſmall of all kinds make good bruſh-wood, and " fire-wood for the common people, who have no coal " but from London.

" It is not to be believed how thick hedge-row trees " are, and once planting does for ever. When they " cut their hedges, which they do ſometimes, both " for profit and to ſecure their ditches, they prune up " all the young trees. The elm here, you know, comes " from ſuckers; the aſh, oak, &c. from ſeed, which " drops into, and is ſheltered by the hedge, and gets " up through it, that one may ſee the fineſt young " trees pruned up a man's height above what is on " the dike, when a hedge hath been lately cut; and " theſe trees ſtand from three to five foot diſtance " all along the dike. The elms, and ſometimes the " aſhes, that are well grown trees, but not what is " called timber, they generally prune very high for " the ſake of the burn-wood that is got off, and to " give air to the reſt that are lower, of all ſizes. They " ſeldom prune up the oak ſo high; becauſe their " branches pay well in bark and otherways, when " old. In ſhort, in the incloſed parts of this country, " it is common to have ſome hundred pounds worth " of timber upon an hundred pound eſtate, as they " either cut all the timber round an incloſure at once, " or pick them out every year; for there is a ſucceſ- " ſion riſes, that every year the timber yields as much " as the land.

" They have ſeveral advantages in the thickneſs of " their hedge-row trees; it makes the fence much

" the

" the ſtronger, eſpecially when new cut, for then it
" ſtrengthens the dry hedge, and a ſtag will hardly
" venture to bruſh through trees within three or four
" foot of one another: By this I ſee the miſtake of
" thinking that the putting ſo many plants in a bank,
" between two ditches, hinders their growth; being
" thus covered from the ſun, they keep in the moi-
" ſture, and it is plain, where the bank is thickeſt, e-
" very thing grows beſt.

Of the crab apples they make verjuice, and the
" farmers ſometimes mix them with their apples
" for cyder; for there is ſcarce one without a little
" orchard.

" The elder berries are of great uſe: The mapple
" grows faſt under the drop of other trees, is a ſtrong
" hedge, makes good ſtakes or burn-wood, and the
" bramble mixed with it, grows high on it, and on
" the hazel and filberd, both which, when cut down,
" run up preſently, and are thickened by the other
" things I have before named. The young trees are
" left, when the hedges are cut, from four to ten
" foot high above the ſtumps of the hedge, and, in
" about thirty or forty years, the elms are fit for
" many uſes, particularly for water-pipes. The uſe of
" the aſh at the ſame age is known every where.
" The oak requires double the time, but anſwers well
" when timber. I managed my hedges in the ſame
" manner, and had as much billeting from pruning
" the hedge-rows, and the pollards, as ſerved my
" houſe in fire. I kept a rotation, by which I had,
" and ever might have had, enough in the few fields
" I reſerved for my own uſe. In ſeven years ſuch
" hedge may be again cut, but for deer they are
" longer.

" I have obſerved very narrowly ſome fields, where
" they cut every year timber to a greater value than
" what the fields yield them; nay, double. I have
" compute

" computed upon the hedges round a ſmall field, of " four or five acres, let for as many pounds, near a " hundred pounds worth of timber, and a ſucceſſion " of different ſizes, that, with care, may yield as " much more every thirty years; ſo that really a man " gets thirty years purchaſe every thirty years, for " the timber growing upon his lands, and the yearly " rent of his ground to the bargain, without any ex- " pence. Some weed them five or ten pounds worth, " as they have uſe for money: Some a whole ſide of " an incloſure, or two ſides at once: Others cut all " the timber-trees in one year." And now having given an account of the different kinds of fences I have made or heard recommended, I ſhall next ſay ſomething

## Of GRASS-SEEDS,

A very great improvement: for the ground, immediately after corn, is many years before it ſwards, and many more before it can produce hay, or tolerable paſture. This improvement was new in this country, till I got the people from Dorſetſhire: I fell heartily to work, tho' the whole country, who are really diſcontented at any new thing, were angry with me. They had a poor opinion of a man's underſtanding, who would ſow graſs upon land that would carry corn. But if I ſhould ſow it upon meer out-ground, or what was poor, they would not blame me; but in that lay their miſtake; for in ſuch land, the crop of graſs is good for nothing; whereas in rich and well manured ground, the graſs is good, and ſoon fitted for corn.

*Broad clover.* The broad-clover with the red flower hath been long in eſteem; it is ſown in good ground after barley, and harrowed with it: the finer the ground is made for this and all other

other graſs-ſeeds, the better. Twenty pounds of clover is enough for a Scots acre, which is about a fifth larger than in England. I have ſeen this clover thrive ſo well, that, after the barley was cut and carried off, the clover was mowed and given green to cattle: the next year, if it was ſeaſonable, it was cut in the end of May, or beginning of June for hay. I ſhall ſay nothing of the making of hay, every day-labourer knowing it. After the crop is carried off, no beaſt ſhould be allowed to touch the field, and the clover will riſe much thicker than it did before: When this is in the flower, it may be cut again for hay, and, by ſparing it a week or two, will yield good paſturage till wet weather, and then cattle ſhould be taken off, leſt they potch the ground. Indeed I moſt commonly keep the ſecond crop for ſeed, which will be ripe in about a month after it is in the flower: the hay of this crop is of no great value, yet black cattle will eat it. After the graſs is threſhed, the ſeed is got clean out of the huſk, and made ready for ſowing, by putting it a certain way through the mill. Clover, if ſown in proper good ground, may yield a crop of hay, another for ſeed, and good paſture in a year, for two or three years; after that it yields one good crop and paſture. But be-

*Clover and Rye-graſs.* cauſe clover ſoon runs out of the ground, ſome ſow twelve pounds of clover and three buſhels of rye-graſs in an acre. This way the ſeed of neither can be had, becauſe the one is much ſooner ripe than the other, and but one crop of hay in a year; but this crop is ſo good as to make ſufficient compenſation, and holds for many years; eſpecially, if, inſtead of hay, it is ſometimes paſtured upon: Nor will this endanger the horſe, as they ſay the clover doth.

*Rye-graſs alone.* When rye-graſs is ſown without mixture along with the barley, four buſhels ought

ought to be ſown in a Scots acre. If the ground is in good heart as it ought to be, it will proſper exceedingly, and the trefoil, or hop-clover, with a yellow flower, will come up very thick amongſt it. I have often tried to ſow this ſeed by itſelf, but in vain, although it comes with the rye-graſs.

*Small white clover.*

There is a ſmall clover with a white flower, that is much in requeſt, and is reckoned the ſweeteſt feeding of any. It may be cut when green, and cattle are very fond of it; but I doubt it will ſcarcely cut for hay without it is mixed with rye-graſs or red-clover. I am told that it is the beſt paſture of any, and that it is much in uſe, and praiſed at preſent.

*St. foin, and lucern.*

I have tried St. foin with very ill ſucceſs, and the lucern with worſe, but perhaps it was the fault of the directions I got. The rye-graſs and clover I have great experience of, and therefore dare recommend them, and they who at firſt laughed at me are now following my example. Some indeed cry out againſt graſs-ſeeds, and the rye-graſs in particular; how juſtly you may judge; for they ſowed it in their worſt lands, and took it ill that their crops were not as good as mine, who uſed it kindly. They ſay there is no plowing out the roots of the rye-graſs, and of courſe they can have no corn: I own in ſo bad land they can have nothing; but my corn where my rye-graſs was, was very good: but, if they will fallow and dreſs their ground, and not take too many crops of corn, and lay it down in good heart with rye-graſs, I ſhall anſwer they will give over railing at it, or at me for recommending it.

*Seaſons for ſowing.*

The ſeaſons for ſowing theſe ſeeds are the ſame with that of barley; but I have ſown the broad clover in the beginning of March without any corn, and it was thrice cut in the flower and eat by horſes

horſes in the houſe that ſame year; they may likewiſe be ſown alone in Auguſt or beginning of September.

I ſhall now end this long paper, and, if it can be of any uſe to my friends, I ſhall not grudge the trouble of it.

HADDINGTON.

*P. S.* In the preceeding treatiſe, I made very free with ſome late authors who have written upon foreſt-trees; but ſince I wrote theſe papers, I have ſeen Philip Millar's dictionary, and Mr. Ellis of Goodſeden's book, called the Hereford-ſhire farmer; and, as I confeſs, they write like men who underſtood what they wrote about trees (except firs, of which they ſeem to have had no experience) I thought it neceſſary to do them juſtice. When I wrote about the BIRCH, I promiſed to direct how to manage it, how ſoon I was informed myſelf. One of my ſervants pretends to know the way of raiſing it by the ſeed: his way is to gather it about the 20th of September when it is full ripe; he then keeps it in a dry cool place till the month of February. The way of ſowing, is to dig a piece of ground, ſomewhat moiſt, and when it is well raked and fallen, ſow it over the ground pretty thick, then chop it down with the back of the ſpade; for it will not bear covering: he then lays on furze-buſhes over it to keep the birds from devouring the ſeed; when they have lain till it peeps, take the furze away, and you will ſoon ſee the young plants appear. In this ſeed-bed let them ſtand two years, and then put them into the nurſery, or ſet them out for good.

I muſt likewiſe add, that, tho' what I have ſaid about the alder, and the ill ſucceſs I have had with them, be true; yet I have ſince ſeen many good and thriving plants of that kind; and a gentleman, whoſe opinion I rely upon, has blamed me very much for what I ſaid in prejudice of them; and aſſured me they are of great uſe. I own it is a fine tree, and, when rightly managed (which mine were not) may come to anſwer very well. This I thought fit to be added, leſt I ſhould be blamed for ſpeaking ſlightingly of a tree that may be of value; and I am not aſhamed to be convinced of an error, nor to amend it.

FINIS.